

— 50. A method for assessing a physiological property of a target tissue, comprising the steps of:

(a) acquiring acoustic data relating to intrinsic tissue displacements at a target tissue site at multiple time points over the course of at least one cardiac cycle; and

(b) relating the acoustic data with a physiological property of the target tissue, wherein said acoustic data is collected by using an ultrasound transducer.

51. The method of claim 50 wherein said ultrasound transducer operates in at least one of the following modes: transmission mode, reflection mode, scatter mode, backscatter mode, emission mode, echo mode, Doppler mode, color Doppler mode, harmonic or subharmonic imaging modes, a-mode, b-mode or m-mode; and correlating the acquired acoustic data relating to intrinsic tissue displacement with a physiological property of the target tissue.

52. The method of claim 50, further comprising the step of acquiring acoustic data relating to intrinsic tissue displacements at multiple target tissue sites at multiple time points over the course of at least one cardiac cycle.

53. The method of claim 50 wherein the acoustic data acquired relating to the intrinsic tissue displacement at the target tissue site relates to acoustic properties of the target tissue.

54. The method of claim 53 wherein said acoustic properties of the target tissue are selected from the group consisting of changes in the amplitude of acoustic signals, changes in phase of acoustic signals, changes in frequency of acoustic signals, changes in acoustic emission signals, changes in length of scattered signals relative to an interrogation signal, changes in maximum and/or minimum amplitude of an acoustic signal within a cardiac cycle, the ratio of the maximum and/or minimum amplitude to that of the mean or variance of subsequent oscillations within a cardiac cycle, changes in temporal or spatial variance of scattered signals at different times in the same location and/or at the same time in different locations, and rates of change of tissue displacement or relaxation.

55. The method of claim 50 wherein said acoustic data relating to said intrinsic tissue displacement at the target tissue site is acquired by administering acoustic interrogation pulses to the target tissue site and collecting acoustic scatter data.

56. The method of claim 55 wherein said acoustic scatter data is acquired at a single acoustic frequency.

57. The method of claim 55 wherein said acoustic scatter data is acquired at multiple acoustic frequencies.

58. The method of claim 50, further comprising the step of relating the intrinsic tissue displacement data and additional data relating to blood pressure, cardiac and/or respiratory cycles, to a physiological property of said target tissue.

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59. The method of claim 50 wherein said target tissue is selected from the group consisting of CNS tissue, heart tissue, and peripheral nervous system tissue.

60. The method of claim 50 wherein said target tissue includes or is in proximity to a blood vessel and wherein the physiological property detected is arterial blood pressure.

61. The method of claim 58 wherein said target tissue is CNS tissue and wherein said physiological property of said CNS tissue is selected from the group consisting of intracranial pressure, cerebral perfusion pressure, vasospasm, stroke, local edema, infection, vasculitis, subdural or epidural hematomas, subarachnoid hemorrhage, ischemic conditions, multiple sclerosis, Alzheimers disease, hypoxic conditions, intracerebral hemorrhage, tumors and other intracranial masses, and acute, chronic and traumatic conditions and injuries.

REMARKS

This Response to Restriction Requirement and Second Preliminary Amendment is in response to Examiner's telephonic Restriction Requirement of January 24, 2003 and in accordance with the telephone interview of January 28, 2003. With entry of this Response and Amendment, claims 1-21, 35-49, and 50-61 are pending in the application. By this Response and